PhD Studentship - Type and Token Identification of Multi-word Expressions

Closing Date: January 13th 2017
Post Status: 4 years
Department: ADAPT Centre, Dublin Institute of Technology
Benefits: Payment of tax free stipend and academic fees

General enquiries concerning this post can be addressed to sinead.gorham@adaptcentre.ie. Please include the reference code UG_PhD6 in the subject of your email.

Research Topic

A multi-word expression is a linguistic expression composed of multiple lexemes where the semantics of the expression is not the normal compositional meaning of the words. Idioms, such as kick-the-bucket, are a typical example of these types of expressions. Processing multi-word expressions pose significant challenges to many natural language processing applications. For example, previous work by ADAPT researchers has demonstrated that the presence of idioms has a significant negative impact on the quality of translations output by machine translation systems. There are two challenges in processing multi-word expressions, identifying if a set of words has a non-compositional meaning association with it and identifying if a particular occurrence of a multi-word expression
is denoting that non-compositional meaning or a standard meaning. The tasks are known as type and token identification. This PhD will develop novel approaches to type and token identification of multi-word expressions.

This PhD project will follow a data driven machine learning approach to the problems of type and token identification. So this research is best suited to candidates who have a background in natural language processing and machine learning. However, candidates with expertise in either of these fields or in related topics will also be considered for the project. The student will carry out their research in a large research team with a highly collaborative research ethos. The ideal candidate would have the following skills and expertise:

• Good written and oral proficiency in English (essential).
• Good communication and interpersonal skills both written and verbal.
• Degree in Computer Science, Computational Linguistics or related field with good programming skills
• Proven ability to prioritise workload and work to deadlines.
• Strong team player who is able to take responsibility to contribute to the overall success of the team.
• Enthusiastic and structured approach to research and development.
• Excellent problem solving abilities.

Background on ADAPT
ADAPT is Ireland’s global centre of excellence for digital content and media innovation. Led by TCD, it combines the expertise of researchers at four universities (Trinity College Dublin, Dublin City University, University College Dublin, and Dublin Institute of Technology) with that of its industry partners to produce ground-breaking digital content innovation.
ADAPT brings together more than 120 researchers who collectively have won more than €100m in funding and have a strong track record of transferring world-leading research and innovations to more than 140 companies. With €50M in new research funding from Science Foundation Ireland and industry, ADAPT is seeking talented individuals to join its growing research team. Our research and technologies will continue to help businesses in all sectors and drive back the frontiers of future Web engagement.

Why join ADAPT @ DIT?
1. Work on hard, relevant problems in an interdisciplinary and exciting research environment. The ADAPT Centre combines expertise of researchers at Trinity College Dublin, Dublin City University, University College Dublin and Dublin Institute of Technology. It brings together more than 120 researchers who have collectively won more than €100M in competitive research funding and have an international track record of bridging research and innovations to more than 140 companies. With €50M in new research funding from SFI and industry, ADAPT research and technologies will help businesses in all sectors to manage, personalise and deliver digital content more effectively.

2. Work in a centre focussed on advancing your career. Whether you want to take an academic, industrial, or entrepreneurial career path, ADAPT prides itself in the support and mentoring that enables all its Students and early-stage researchers to reach their full potential. This year alone its postdoc-to-PI programme has helped three postdocs transition to be Principal Investigators on their own H2020 projects, while four others have recently won funding with ADAPT support to realise the commercialisation of their research through spin outs and
licensing.

**Requirements:**
The successful candidate will have a primary degree in Computer Science or a related discipline, a minimum of II.I grade required. Strong machine learning and statistical skills required, and of advantage would be familiarity with unsupervised methods. Background in Natural Language Processing (NLP) would also be a distinct advantage. The ideal candidate would have done an MSc with a Machine Learning or NLP focus.

**Funding Information:**
The position is funded through the Science Foundation Ireland (SFI) ADAPT Research Centre.

**Application Procedure:**
For further information and informal contact, please email sinead.gorham@adaptcentre.ie. Please apply via email to vacancies@adaptcentre.ie, including:
- A targeted cover letter (600-1000 words) expressing your suitability for a position
- A complete CV
- Names and contact details of two academic referees
- **Please include the reference code UG_PhD6 in the subject of your email**

There will be a screening and interview process; a successful candidate will then be invited to apply via the DIT Graduate Research School admission system.

**Equal Opportunities Policy**
Dublin Institute of Technology is an equal opportunities employer.